

the reACTant

Volume 12 Number 2 Summer 2005

On the web at <http://www.statweb.org/ACT2>

The Newsletter of the Associated Chemistry Teachers of Texas

Silver Edition Biennial

by Rosendo
García

My fellow Chemistry teachers, let the fun begin!!!!
Oops, I mean Let the LEARNING begin. Time is fast approaching for our Biennial Conference. Details are being worked out and final touches are being applied. The committee is excited that you are coming and we are keeping our fingers crossed that all is in preparation for your arrival. You get to Denton from IH-35. It is located about an hour north of Ft. Worth. (If you are coming from the South, GO THROUGH Ft. Worth. Believe me, it is faster to go THROUGH Ft. Worth because there will be less traffic than Dallas. Once you get on campus, look for the Biennial signs.

The whole thing kicks off on Tuesday, July 5 with on-site Registration in Traditions Dorm. Be sure to get a Parking Permit or have money to pay the ticket.

The first activity is an informal Mixer where we will examine different mixtures and an ice melting demo. Our first plenary session is set for Wednesday morning featuring John Gelder from Oklahoma State University. John is famous for his on-line resources. What a great way to get things rolling so plan on waking up early! The afternoon will include plenary session #2 with the exciting Pat Funk from Ohio. Funky is just Fun! We will finish off the first day with the Mean Green Demo Team and some liquid Nitrogen Ice Cream.



Most of us will be in Traditions Dorm. Linens will be provided but you might want to bring an extra blanket (dorms get cold) or towel (I like to have extra). You might also want to bring a radio, a lamp and hand soap. Bring games, cards and change for the all-night party we usually have too. Bring goggles and aprons - many of your choices are labs.

Thursday we have plenary session #3 with the amazing Bette Bridges from Massachusetts. If you have never seen Bette, you are in for a treat. Bring a game to share for the Game-A-Thon on Thursday night. We all have game we do that works great — bring the game and copies to share (about 140 copies should do). We plan on playing the games all night long. The Game-A-Thon doesn't work without you!

Friday is the international day of the conference with the plenary session #4 with Andy Cherkas from Ontario, Canada. Andy will show us how they do things in

the Great White North, aye! Two very popular workshops are set for Friday. Funky will be showing us how to dye a lab coat! Larry Peck will show us how to make a Burning Book. Space is limited but we will try and squeeze you in! The Banquet will be at the Circle R Ranch and will be fun time for the whole family. Also, don't forget the Silent Auction which funds our Travel Scholarship. Bring an item for the Silent Auction and help us raise some funds for next time.

Friday evening ends with our now traditional Demos in the Dark — bring a demo — and something we are calling Moonlight Luminescence. Kathleen Holley is in charge of the Moonlight thing, need we say more. Don't miss it!!

Saturday morning we will close out the whole show with plenary session #5 featuring demos from our keynote speakers. Again we are planning on a busy-productive-fun-filled conference.

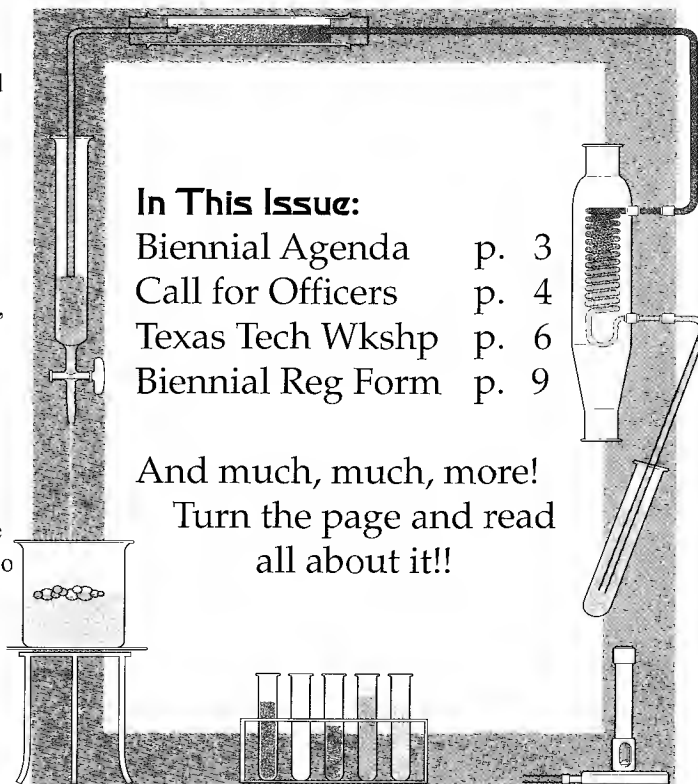
See ya soon!



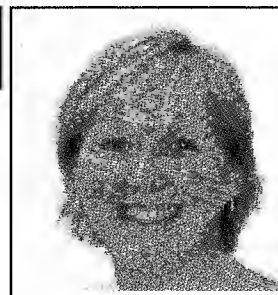
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And much, much, more!
Turn the page and read
all about it!!



President's Corner



Roxie Allen

It seems like just yesterday that I was elected president of our organization and with the Biennial this summer a magic wand will wave over my head and I will become the wise sage and offer my experience to Dale and the other officers. It has been a great time the past four years and I have enjoyed every minute. We organized a great conference in Galveston and I look forward to a fine time in Denton this summer from Dale and his committee.

NSTA was in Dallas and ACT₂ was very visible at the Journal of ChemEd booth. Diana set a conference record with over 30 subscriptions. We saw lots of old friends and make several new ones. Some of our members even presented workshops. ACT₂ is known across the country as an active and wild group of chemistry teachers and we lived up to our reputation.

The Denton crew has lined up presenters from the north and north of the border. Andy Cherkas is coming from Ontario to warm up in the Texas sun and share some of his experience. Pat Funk is coming in from Ohio and will be leading us in tie-dyeing lab coats and any other thing you bring to dye. Bette Bridges will be in from Massachusetts and will have some great demos and a bunch of great info. Dr. Larry Peck will be showing us how to make his famous burning book. You still have time to be a presenter also. Get your proposal into Dale right now and share your expertise. And don't forget to get your registration in for the Biennial — you will not want to miss all the fun and the fireworks.

It has been a wonderful experience being president of our great group of educators. I thank you for the honor and look forward to seeing you all in Denton in a few weeks.



Roxie



Treasurer's Report

4/23/05
by Jane Gray

Opening Balance	\$7,466.40
Income	
Interest	\$1.73
Member dues	\$390.00
t-shirt/bandana	\$67.00
Carolina Scientific sponsor	\$250.00
Total Income	\$708.73
Expenses	
Mugs	\$271.60
Promotions	\$607.37
Travel (Blake)	\$341.00
Total Expenses	\$1219.97
Total Income - Expenses	\$3955.16
Reserve Fund	\$6478.68

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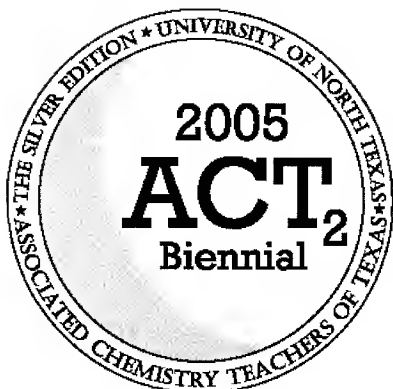
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Beginning Our 25th Year
The Silver Edition

ACT₂ Biennial Conference

July 5 - 9, 2005
Tuesday - Saturday
at the University of North Texas

Tuesday, July 5

Registration at Traditions Dorm
Mixture Mixer get together



Wednesday, July 6

1st Plenary Session featuring John Gelder, OK State U
Presenter workshops
2nd Plenary Session featuring Pat Funk, Pinkerton, Ohio
Evening Entertainment
Mean Green Demo Team, Nitrogen Ice Cream



Thursday, July 7

3rd Plenary Session featuring Bette Bridges, Bridgewater, Mass.
Presenter workshops, labs, and sessions
ACT₂ Officer Elections
Chemical Game-A-Thon



Friday, July 8

4th Plenary Session featuring Andy Cherkas, Ontario, Canada
Presenter workshops, labs, and sessions
Dr. Larry Peck's "Burning Book Workshop" (limit 45)
Funky's "Tie-dye Lab Coat Workshop" (limit 50)
Banquet & Night of Fun at Circle R Ranch
Silent Auction, Demos in the Dark, and Moonlight Luminescence



Saturday, July 9

5th Plenary Session: Demos with Pat Funk, Bette Bridges, Andy Cherkas
Presenter workshops, labs, and sessions
Silent Auction payout and pickup
Final Give-aways



Call for Officers

We are looking for a few good people. At the Biennial we elect new officers and we need you! With the proposed constitution change officers elected this summer will serve until summer 2008. The president-elect will plan our Biennial for summer 2008. The change gives our new president-elect three years to put together a committee and plan the Biennial for 2008.

If you are interested in being an officer, contact Roxie. If you don't decide until you arrive at the Biennial, you can still run. Offices are President-elect, Treasurer, Secretary, and reACTant editor. Good Luck to all!

ACT₂



Dale (pres-elect), Jane (Sec), Melissa (past pres), Roxie (pres)

by Dr. Jim Marshall
University of
North Texas

Cesium

Fluorspar (CaF_2) has been known since the 1500s. In 1670 the glass cutters of Nuremberg discovered that fluorspar when treated with acids etched glass. Various investigators who studied this "acid of fluorspar" (hydrofluoric acid, which is extremely poisonous) became ill and even died. Henri Moissan prepared elemental fluorine itself in 1886 by electrolyzing a KF-HF melt chilled to -23°C . At the anode fluorine was produced, identified by bursting a piece of silicon into flame.

Fluorine (F_2) is the most reactive and corrosive of the oxidizers, carbon, and even water burn in fluorine with a bright flame. Fluorine is used in producing uranium (from UF_6), various fluorochemicals and freons (chlorofluorocarbons, CFCs), high-temperature plastics, and etched glass products. Fluoride in drinking water and toothpaste helps prevent dental caries, but an excess of fluoride is toxic.

F 9

[L. *fluere*, flow]

Hydrofluoric acid known since 1700s,
element isolated in 1886

mp 53.4 K; bp 84.9 K; density 1.70 g/L



Discovery of the Elements, by Dr. Jim Marshall of UNT

ACT₂

CAST - Houston

STAT Annual Conference

October 27 - 29, 2005

Reliant Center

Houston, TX



Details at

www.statweb.org

Spacecity, USA

ACT₂

Constitution Change

The Executive Board of ACT₂ proposes to revise the constitution of the organization so that the Biennial Conference will be held during even numbered calendar years. The change would allow members the opportunity to attend the International ChemEd Conference during odd numbered calendar years. Currently members encounter a financial hardship to attend both meetings during the same summer or choose to attend only one conference. Both meetings are great professional development opportunities. The change would also allow more non-Texas presenters to attend and provide workshops at the ACT₂ Biennial. A vote will be held at the 2005 ACT₂ Biennial Conference this July in Denton, TX.

The amendment would necessitate a change of one word from "odd" to "even" in Article VI.



ARTICLE VI. MEETINGS

There shall be at least one meeting a year which shall be held in the fall in conjunction with the CAST conference sponsored by the Science Teachers' Association of Texas (STAT). In odd even numbered calendar years, a second meeting shall be held in the summer at the association's Biennial conference.

ACT₂

the reACTant, Summer 2005

Radiation in Schools

Three San Antonio high schools had radioactive material removed in April. A team from the Los Alamos National Laboratory in New Mexico removed a 1800 pound gammator, which is about the size of a beer keg, from Lanier, Fox Tech and Brackenridge high schools. The equipment was used in the early 1960s in science classrooms to irradiate biological material. The Department of energy wanted the high source of secured into federal custody. San Antonio ISD tried in the past to get the radioactive material removed but it was too expensive.

The gammator was one of over 100 that were distributed in the early-1960s to schools, hospitals and other institutions under the "Atoms for Peace" programs. A similar gammator was removed from a school in Medford, NY in August 2004. A gammator contains four 1-inch rods of about 400 curies of Cesium-137. Cesium-137 is a highly radioactive isotope that appears in powdered or pellet form, making it highly portable and very dangerous.

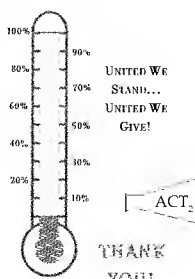
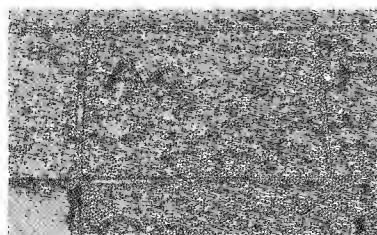


Gammator in San Antonio Classroom



Actinium

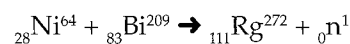
At CAST this past fall the membership voted to sponsor an element at the University of North Texas. Outside the new chemistry building is a periodic table built into the sidewalk. A donation of \$5000 gets our name engraved on "Our Element." What better element to represent us than **ACTinium**. We collected over \$100 at the CAST luncheon to start the fund raising. We will continue collecting funds as long as it takes. We'll keep you posted on the progress and we hope to have it all paid for and engraved by summer 2007 in time for ChemEd '07.



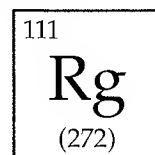
Roentgenium

The IUPAC has officially named element 111 roentgenium with symbol Rg. The name follows the long-established tradition of naming elements to honor famous scientists. Wilhelm Conrad Röntgen discovered X-rays in November 1895. He gave them this name because of their uncertain nature. Their use has since revolutionized medicine, found wide application in technology and heralded the age of modern physics. The benefits of X-rays became quickly evident and just six years later Roentgen was awarded the first Nobel Prize in Physics. Element 111 was synthesized exactly 100 years after Roentgen's discovery.

Roentgenium was first created at the Gesellschaft für Schwerionenforschung (GSI) in Darmstadt, Germany in December 1994 by Sigurd Hofmann, V. Ninov, F.P. Hessberger, P. Armbruster, H. Folger, G. Münzenberg, and others. Only three atoms of it have been created by the fusion of bismuth-209 and nickel-64 in a linear accelerator. (Nickel was bombarded onto the target.)



The longest-lived isotope has a mass of 280 and a half-life of 3.6 seconds. Due to its presence in Group 11 it is a transition metal and so probably would appear as a heavy, solid, shiny metal.



Name Origins

You ever wonder where some of the names of the elements came from? Some are named for people, others for places, colors, mythology, or celestial bodies. Some are just made up! Check these out.

Actinium - Greek *aktinos* or ray for radioactive element
Argon - Greek *A-ergon* for no work/no action. Argon is unreactive

Astatine - Greek *A-statos* for not lasting, not standing. Astatine is radioactive and disintegrates. Estimates are 1mg / 1kg of earth's crust.

Dysprosium - Greek *Dysprositos* for difficult to obtain.

Krypton - Greek *kryptos* for hidden. After distillation of N, O, and Ar from liquified air, there was another element hiding in the liquid.

Protactinium - Greek *Protos* for prior or first. Protactinium is prior to Actinium in a radioactive series.

Technetium - Greek *Technetos* for artificial. The first artificial element. Produced from molybdenum and deuterium.

Ringnes, V. *Origin of the Names of Chemical Elements*. J. ChemEd, Sept. 1989.



CENTER FOR ENGINEERING OUTREACH

Teacher Training Institute

TEXAS TECH UNIVERSITY ■ SUMMER 2005

Bring hands-on learning into your classroom.

Join teachers from across the state for the Teacher Training Institute—a series of weeklong workshops focused on hands-on, engineering education topics. Offered by the Center for Engineering Outreach at Texas Tech University, this year's workshops present new and exciting ways to challenge your students and actively involve them in the learning process.

Why Teach Engineering?

When students complain that they will never use what they learn in the real world, what they're really asking for is a chance to apply their classroom knowledge. Engineering projects provide an exciting context for teaching all subject areas in a way that promotes critical thinking and gets students actively engaged in the learning process.

Classroom Benefits

Reinforce the fundamentals of math and science by having students build and launch their own model rockets. Build logical thinking skills and problem solving by programming robots built with Lego® bricks. Hands-on learning brings the lesson out of the book and into the "real world," giving students a chance to question what they learn in class and build on their knowledge by applying it to actual problems.

Professional Benefits

Our teacher training experience is focused on equipping you as an educator. Every workshop includes SBEC and G/T professional development credit as well as the materials you need to implement workshop activities in your classroom. Workshops are taught by industry and educational professionals and provide teachers a great opportunity to meet and network.



Workshop Schedule

With workshops at both the Lubbock and Junction campuses of Texas Tech University, you can focus on your training at a location close to home. This summer's workshops are scheduled for the following dates.

June 20-24, Junction

June 27 - July 1, Junction

July 11-15, Junction

August 1-5, Lubbock

Each 5 day / 5 night workshop is limited to 15 participants. Check-in for all workshops begins Sunday. Workshops begin on Monday morning and continue through Friday at lunch unless otherwise noted.

Daily workshop training classes are combined with evening breakout sessions to provide a fun mix of activities. A detailed schedule of daily events will be sent with your confirmation packet.

Registration

Registration forms are available online at www.outreach.coe.ttu.edu/institute. Mailing the completed form with a \$100 non-refundable deposit or your full registration fee guarantees enrollment. The balance of your registration is due at check-in.

Total cost for each of the workshops is \$350 and covers all workshop materials, classroom resources, and room and board.

Complete your registration before May 13 to receive a \$50 discount on all training workshops.

www.outreach.coe.ttu.edu/institute



Registration form available on-line at
www.outreach.coe.ttu.edu/institute

Registration Deadline Extended
Mention "TAME"
Texas Alliance for Minorities in Engineering



the reACT₂ant, Summer 2005

Workshop Descriptions

Introduction to Robotics

Junction Campus
36 hours SBEC credit (15 G/T)

Learn how to incorporate engineering education in your classroom by using Lego® robotics kits. Structures, mechanisms and programming are a few of the engineering concepts addressed by this weeklong workshop. Participants receive a Lego® Mindstorm kit, all workshop materials, a classroom resource guide, and a project idea book.

Applied Robotics for the Classroom

Provided by PITSCO - Lego Education

Junction Campus
36 hours SBEC credit (15 G/T)
Requires experience with RoboLab software

Teachers experienced with RoboLab software are invited to advance their skills in this special topics workshop. Investigating the use of robot sensors, teachers will learn how to conduct experiments in the classroom using Legos®. Measurement and data collection with robot sensors will provide a springboard for discussing RoboLab Inventor IV and RCX to RCX communication. Participants receive a set of Lego® sensors demonstrated in the workshop and additional resource materials for their classrooms.

Introduction to Rocketry: The Physics of Stable Flight

Junction Campus
36 hours SBEC credit (15 G/T)

By exploring the history of rocketry, teachers in this workshop will learn how to use principles of aero science and engineering design to teach physics and advanced mathematics. Teachers enrolled in this workshop will build and launch their own rockets as they investigate the physics of stable flight. Participants receive rocket components for three flights, a site license of RocketSim software, all workshop materials, and three rocket kits for demonstration in their classrooms.



Schedule

June 20-24

Environmental Education

June 27 - July 1

Introduction to Robotics

Introduction to Rocketry

July 11-15

Applied Robotics in the Classroom

Exploring Space

August 1-5

Advanced Rocketry



Advanced Rocketry: Tripoli Certification

Lubbock Campus
36 hours SBEC credit (15 G/T)

Requires completion of *Introduction to Rocketry*

Adventurous teachers that have completed the Introduction to Rocketry course are invited to participate in our advanced rocketry workshop. First time participants will attempt Level 1 and 2 certification from the Tripoli Rocketry Association. Teachers that have successfully completed the Tripoli Level 2 certification are invited to attempt Level 3 certification by submitting and completing a proposal for a rocket project of their own design. Level 1 and 2 participants receive rocket supplies and a site license of RocketSim software. Level 3 participants receive a materials stipend for their proposed project and the certification launch at Wayside, Texas. This workshop extends through Saturday at noon.

Environmental Education

Provided by the Outdoor Learning Center

Junction Campus
50 hours SBEC credit

The Environmental Education workshop investigates our impact on the environment. Workshops include classroom education topics like kinesthetic learning, teaching for different learning styles, and differentiation in the classroom. Field investigations include watershed education, soil conservation, and Project WILD.

Exploring Space

Provided by NASA Aerospace Education Services Program

Junction Campus
36 hours SBEC credit (15 G/T)

Introducing teachers to aerospace exploration, this workshop covers the history of space exploration and NASA's current missions and research. Learn how to use curriculum elements developed by NASA in a full range of earth science and space-related topics

TEXAS TECH UNIVERSITY

Center for Engineering Outreach

Inspiring and preparing tomorrow's engineers.

Registration Deadline Extended
Mention "TAME" & Rosendo Garcia
Texas Alliance for Minorities in Engineering

Chem Ed 2005

BCIT <http://nobel.scas.bcit.ca/chemed2005/>



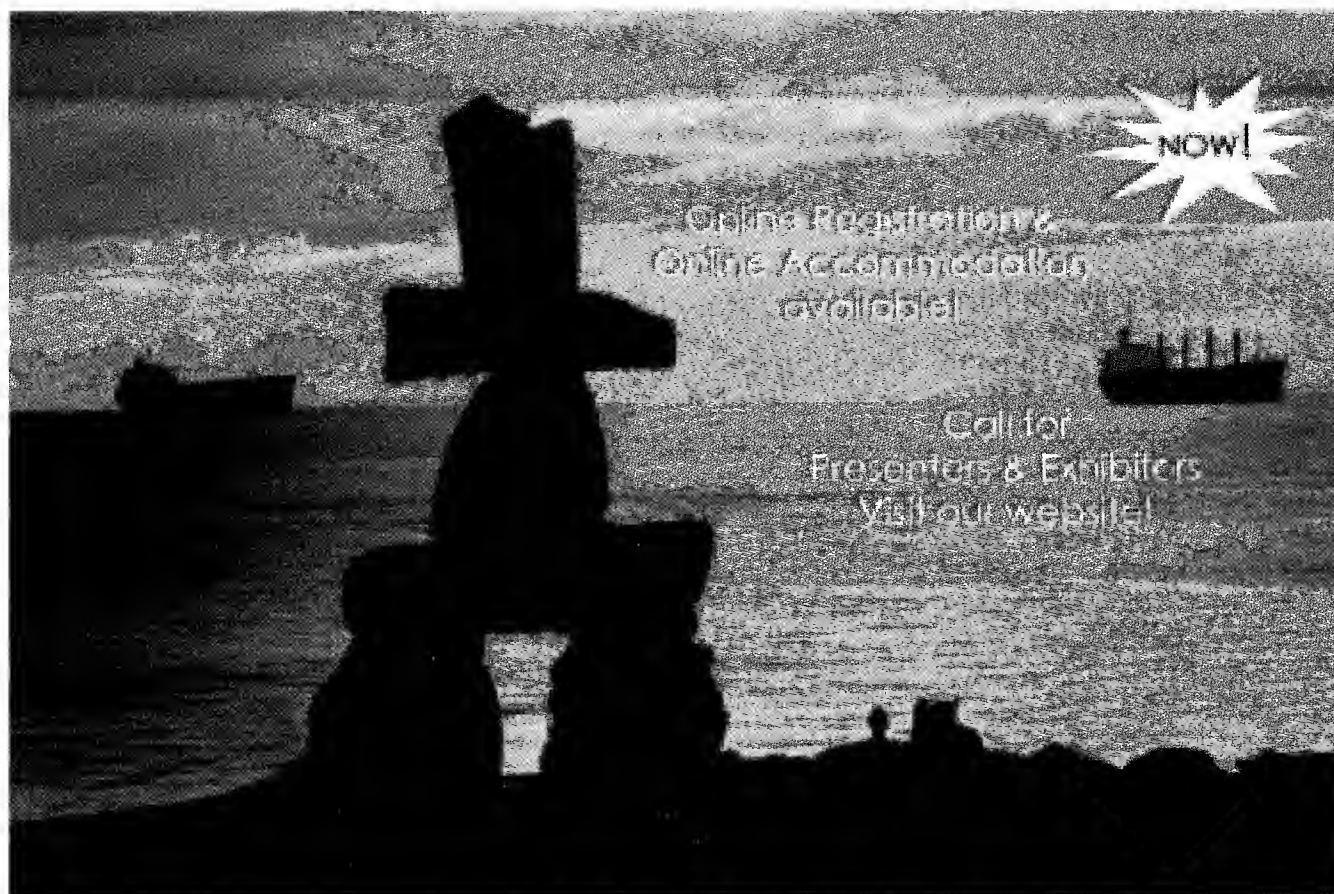
The 18th Biennial ChemEd Conference

ChemEd 2005 will feature:

Friesen lecture by Ariel Fenster
"Chemistry: It's Magic!"

Plenary session by Penny LeCouteur
"CHEMOPHOBIA – are we the problem?
can we be the solution?"

- Guest Lectures
- Hands-on Workshops
- Chemical Demonstrations
- Vendor Exhibits
- Poster Session
- Mole Run/Mole Breakfast
- Educational Tours
- Family & Social Activities
- Sightseeing Tours



NOW!

Online Registration &
Online Accommodation
available!

Call for
Presenters & Exhibitors
Visit our website!

University of British Columbia
Vancouver, BC CANADA

July 31 - August 4, 2005

The Silver Edition



ACT₂ Biennial Conference
University of North Texas
July 5 - 9, 2005
Registration Form



Name: _____ Email: _____
Last First

Street Address: _____ School Name: _____

City, State Zip: _____ School District: _____ ISD

Phone: _____ ESC Region: _____ STAT Member ☐ Yes ☐ No

Job Description: ☐ HS Teacher ☐ Dept. Head ☐ Principal ☐ Supervisor ☐ 2-year college ☐ University
Check all that apply

All plenary sessions, concurrent sessions, snacks, T-shirt, goodie bag, CD of handouts, banquet, moonlight luminescent, and transportation to and from the banquet are included for the registration fee. Accommodations and meals are extra.

Registration Fee: Until June 1 — \$150 After June 1 and on-site — \$175 = _____

Dorm Accommodations Traditions Dorm (linens provided) requires full meals.
A list of hotels in the area is available at <http://www.discoverdenton.com/stay.shtml>



Please mark nights needed: ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday

Double Occupancy (with linens) \$22/night/person x nights = _____

Single Occupancy (with linens) \$25/night/person x nights = _____

In order to assign roommates please mark your gender: ☐ Male ☐ Female

Roommate's Name: _____

If no roommate preference is given one will be assigned. Please note that there are a limited number of dorm rooms so only double occupancy is available unless there are extenuating circumstances. The majority of rooms are suite style with two single beds in each room. **Linens will be provided.** Check out time is noon on Saturday.

Meals on campus

Meal ticket will include:

- * Breakfast all four days
- * Lunch Wednesday through Friday
- * Dinner Wednesday and Thursday

Please note:

*Tuesday night will be a mixtur e mixer which will have light snacks.
Friday evening's meal is the Banquet at the Circle R Ranch in Flower Mound followed by Demos and other festivities.*



Meal tickets needed: _____ x \$55.00 = _____

Additional Banquet tickets needed: _____ x \$43.00 = _____

☐ Please mark if a vegetarian meal is needed at the Banquet.

Parking

Due to UNT parking regulations a \$3.00 per day parking fee will be charged.

Number of parking permits needed _____ x Number of days _____ x \$3.00 = _____



Dorm, Meals, Parking Sub-total _____

Dorm, Meals, Parking Sub-total (from other side of form) _____

T-shirt (One free, additional ones, \$10) *Indicate sizes below*

(Please note: \$2.00 additional charge for 2XL or larger.)

<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> XL	<input type="checkbox"/> 2XL	<input type="checkbox"/> 3XL	= <u>FREE</u>
<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> XL	<input type="checkbox"/> 2XL	<input type="checkbox"/> 3XL	\$10/shirt = _____
<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> XL	<input type="checkbox"/> 2XL	<input type="checkbox"/> 3XL	\$10/shirt = _____

Additional items:

☐ Burning Book Workshop

The burning book workshop has an additional fee of \$15.

Burning Book = _____

☐ Tie-Dye Workshop

The Tie-Dye workshop has an additional fee of \$40 to cover the cost of the 100% cotton lab coat that will be dyed. You may also bring your own 100% cotton item to dye. Mark the lab coat size needed below.

(Please note: If less expensive lab coats are procured, refunds will be issued.)

<input type="checkbox"/> S	<input type="checkbox"/> M	<input type="checkbox"/> L	<input type="checkbox"/> XL	\$40/coat = _____
----------------------------	----------------------------	----------------------------	-----------------------------	-------------------

I will bring my own item to Tie-dye. ☐ lab coat ☐ T-shirt

Dues: ☐ \$10.00 One year ACT₂ membership ☐ \$20.00 Two year ACT₂ membership Dues = _____

TOTAL (Make checks payable to ACT₂) _____

Additional Information

☐ CPE credit certificate needed

☐ Will bring items for the silent auction (science stuff, fun stuff, silly stuff!)

☐ Will bring a chemistry game that I play in my class for Chemistry Game-a-thon.

We are organizing a game night where the games will be explained. Please bring a copy of your favorite chemistry game that you play in your classroom. Please e-mail a copy to Dale B. Moore by May 1st so that it may be included on the CD.

Registration Grant:

There are a limited number of grants available to defray registration fees. If you would like to be considered for one, please complete the form as soon as possible and submit it with payment for everything. Grant decisions will be made on Friday, May 6th based on forms received at that time. You will be notified if you are awarded a grant shortly after that date. A refund of the registration fee will be in your registration packet at the conference. Grants are given according to the following priority: teachers attending the conference for the first time, followed by teachers traveling the farthest distance, then those willing to present will be considered for the scholarship. Grant funds are raised through the silent auction — so bring an item!

☐ Please consider me for a registration grant. Attach a paragraph stating why you should be awarded a grant.

This form and payment must be postmarked by June 1, 2005 for pre-registration.

A confirmation email will be sent after payment is received.

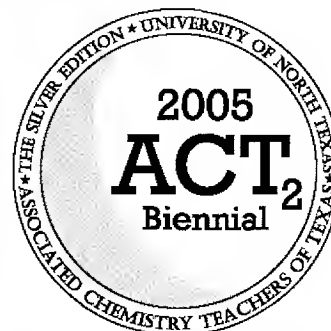
Return forms with payment to: Todd Abronowitz
1737 East Frankford #3804
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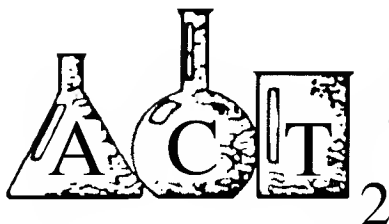
If you have any questions regarding the Biennial ACT₂ Conference contact Dale B. Moore.

Home phone: 817-472-5854 School phone: 817-375-6700

Email: dmoore@aisd.net

dmoore03@sbcglobla.net





ASSOCIATED CHEMISTRY TEACHERS OF TEXAS MEMBERSHIP APPLICATION

(Current members should use this form to update information)

SOCIAL SECURITY NUMBER _____ DATE _____

NAME _____
Last First MI

E-MAIL ADDRESS _____

SCHOOL DISTRICT _____ I. S. D. _____ ESC REGION _____

SCHOOL NAME _____ STAT MEMBER ☐ YES
☐ NO

HOME ADDRESS (where mail can be sent even during the summer)

Street City State Zip

PHONE NUMBERS (include area codes)

() () ()
HOME SCHOOL FAX

reACTant INFO: (Check how you would like to receive the newsletter.)

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JOB DESCRIPTIONS: (Check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> TEACHER | <input type="checkbox"/> HIGH SCHOOL |
| <input type="checkbox"/> DEPARTMENT HEAD | <input type="checkbox"/> TWO-YEAR COLLEGE |
| <input type="checkbox"/> PRINCIPAL | <input type="checkbox"/> UNIVERSITY |
| <input type="checkbox"/> SUPERVISOR | <input type="checkbox"/> OTHER _____ |
| <input type="checkbox"/> OTHER _____ | |

DUES: (Check all that apply)

\$10.00 ☐ ONE YEAR MEMBER, ACT₂
\$20.00 ☐ TWO YEAR MEMBER, ACT₂

MAKE CHECK, PAYABLE
TO ACT₂, AND MAIL TO:

Jane Gray, ACT₂ Treasurer
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Richmond, TX 77469

TOTAL PAID \$ _____

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Account Name	_____
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Please Do Not Delay

Use application form (p. 11) to update your membership information.

Check your Dues Date!
If it has expired, this is your last issue!!

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In the next issue????

If you have something you think
should be in the reACTant, send it!

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e-mail — Better!

Or better yet, click the reACTant link
on the ACT₂ web site!